

ABSTRACT OF THE DISCLOSURE

A thermal head includes a metal substrate; an insulating layer formed on the surface of the metal substrate; a plurality of heating elements disposed on the surface of the insulating layer, the heating elements being arranged with a predetermined pitch along a plurality of lines in a main scanning direction, the plurality of lines being spaced from each other in a paper feeding direction perpendicular to the main scanning direction; and a heat radiating element projecting from the surface of the metal substrate to the side where the insulating layer is disposed. In this structure, although most of heat generated by the respective heating elements is transferred to an ink ribbon or print paper, residual partial heat is absorbed by heat radiating means via the insulating layer and radiated into the atmosphere. This suppresses thermal interference among the heating elements. The invention also discloses a thermal head controller for controlling a thermal head for use in a printer, the thermal head serving to form an image with at least one color on print paper, the thermal head including a preheating heater and a printing heater, the thermal head controller comprising: preheating control means for controlling preheating of each line performed by the preheating heater; and amount-of-heat correction means for

correcting the amount of heat generated by the preheating heater for each line such that the effective amount of preheating heat is maintained substantially constant over all lines. In this construction, even if heat generated by the preheating heater is stored in a part near the preheating heater, nonuniformity in color intensity does not occur because the effective amount of heat given to each line during the preheating process is maintained substantially constant. A thermal head controller according to another aspect of the invention includes signal generating means for generating a control pulse signal serving as a reference signal according to which the energizing of the printing heater is controlled; and preheating control means for controlling the energizing of the preheating heater by means of counting the control pulse signal. In this construction, the energization start time of the preheating heater is controlled by means of counting the control pulse signal which is also used to control the energization of the printing heater. This makes it possible to control the energization start time of the preheating heater without resulting in an increase in complexity of the circuit. Furthermore, by setting the control pulse signal to have a proper pattern, it is possible to control both the energization of the preheating heater and the energization of the printing heater in a highly effective fashion thereby

increasing the printing speed using a simple configuration.